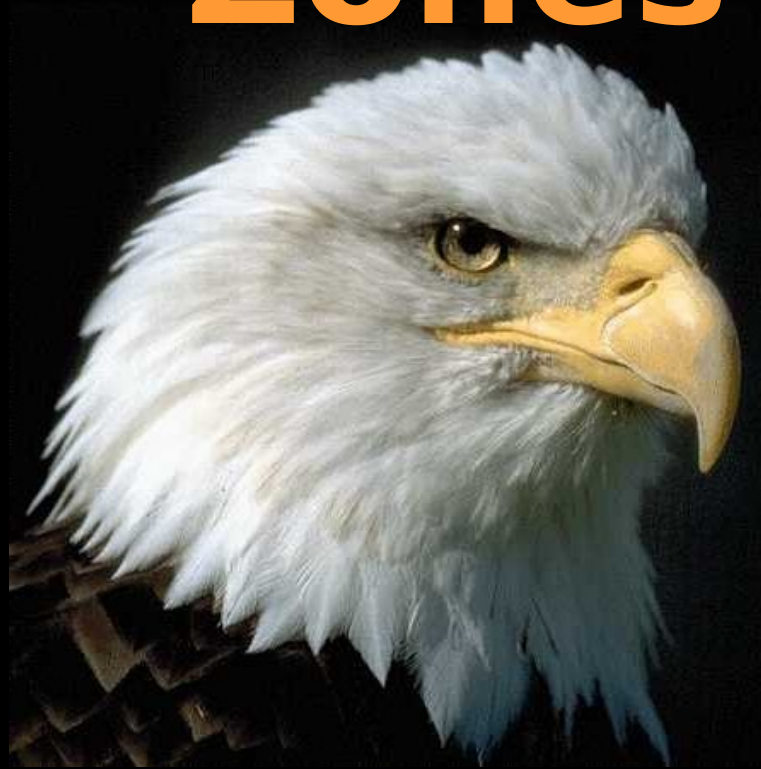


# Tactical Landing Zones



*CWO 3 Greg Lopez*



This Presentation is:  
UNCLASSIFIED



# Purpose

- To familiarize the WTI with the selection, surveying and operation of a Tactical Landing Zone (TLZ).



# ELOs

- State the three basic categories of TLZs.
- State the different equipment used to set-up a TLZ.
- State the different ways to set-up a TLZ.
- State the safety criteria for the determination of a TLZ.

# TLZ's are used by Transport Aircraft to;



- Insert follow-on forces
- Extract non-combatants
- Deliver supplies
- Refuel aircraft
- Other missions



# SUPPLY DELIVERY





# RE-FUEL OPS





# NEO





# TLZ Classifications



- Unprepared
  - Deserts, dry lake beds, and valley floors
- Prepared
  - Constructed surfaces with limited use may/not have aggregate
- Surfaced
  - Roads, highways and other paved surfaces

# TLZ Criteria



- Sufficient size to permit rapid takeoff, landing and loading operations.
- Surface material may vary depending on aircraft's capabilities.
- Slope and elevation of TLZ.
- Movement area restrictions.



# Surface Conditions



# High Strength

- Permanent improved surface runways
  - Asphalt
  - Concrete
  - AM-2



# Marginal Strength

- Temporary airfields
- Minimum soil strength CBR 3-5
- Minimum surfacing or unsurfaced





# Environmental Conditions

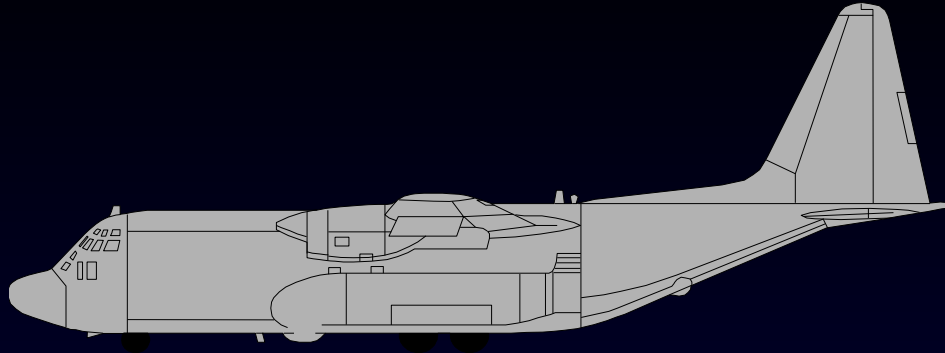
- Rain, sun and wind can effect surface conditions
- Existing condition at the time of the survey should be noted



# Traffic Areas

- Particular attention should be paid to:

- Runways
- Taxiways
- Parking Aprons
- Overruns

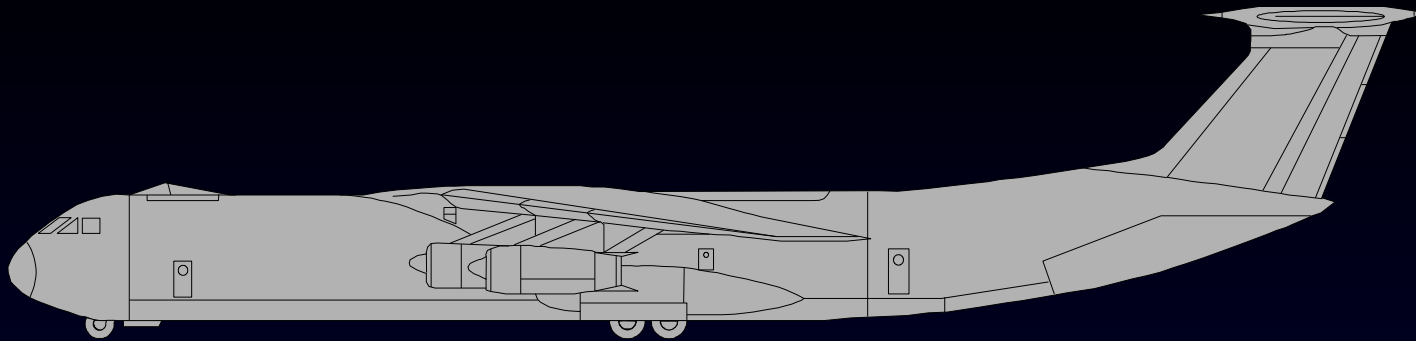


# Runway Sizes C-130

Length	Width No Turn	Width 180 Turn	Width 3 Pt Turn
3000' (3500' Normal)	60 Feet	60 Feet	50 Feet (60' Normal)



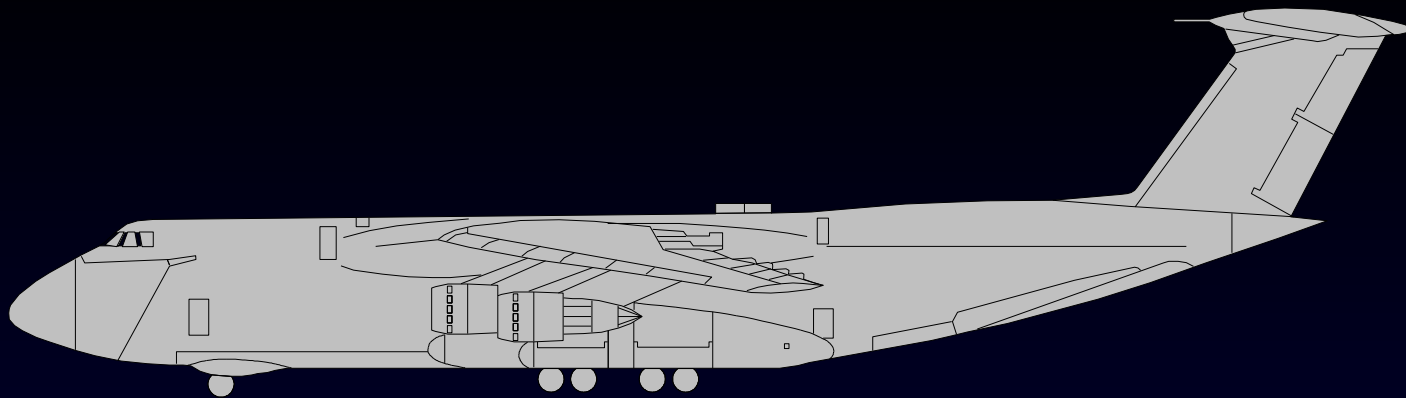
**Runway 3500' X 60'**



# Runway Sizes C-141

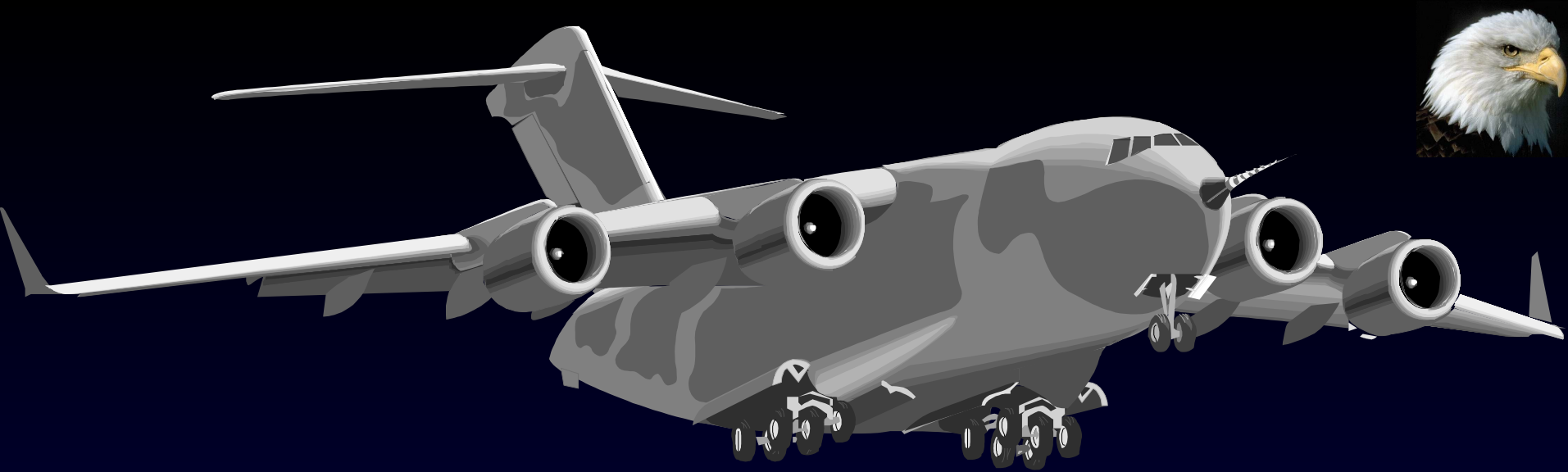
Length	Width No Turn	Width 180 Turn	Width 3 Pt Turn
6000'	98'	138'	N/A





# Runway Sizes C-5

Length	Width No Turn	Width 180 Turn	Width 3 Pt Turn
6000'	150'	150'	N/A



# Runway Sizes C-17

Length	Width No Turn	Width 180 Turn	Width 3 Pt Turn
3000' (3500' normal)	90'	132'	80' (90' normal)



# Taxiways

- Used for aircraft movement
- Parallel taxiway's may be used as an additional runway
- May be used for temporary parking



# Parking Aprons

- Necessary to prevent clogging the runway
- Important to MAGTF Operations
- Safe separation between aircraft
- Access for H/E for embarkation of personnel and equipment



# Overruns

- Extends a minimum of 250' from arrival and departure ends of runway
- Emergency aborts
- Cleared area for short landings





**Runway 3500' X 60'**



**Overrun  
250' X 60'**



# Obstacles

# Overrun/Runway Obstacles



- Rocks
  - One inch in diameter must be removed unless embedded or interlocked
- Dirt Clods
  - 6 inches in diameter (burstable) are ok
  - 4 inch diameter similar to rocks must be removed

# Overrun/Runway Obstacles (cont.)



- Tree stumps
  - Must be removed
- Ditches
  - Must be eliminated and packed to surrounding CBR
- Depressions
  - 15 inches in diameter and 6 inches deep must be filled

# Overrun/Runway Obstacles (cont.)



- Soil mounds
  - If exceeds 15 inches in diameter and 6 inches in height, must be leveled
- Potholes
  - If exceeds 15 inches in diameter and 6 inches in depth, must be filled





# Shoulders

- Parallel the length of the TLZ on both sides
- Extends 10 feet laterally
- Any rocks that can be ingested by aircraft engines or cause damage to the bottom of the aircraft, must be removed



**Overrun**  
**250' X 60'**



# Clear Zones

- 150 feet wide at the approach and departure ends of the runway
- Extends to 500 feet in length with a max width of 500 feet



**Lateral Safety Zone 75' 7:1**

**Clear Area 35'**

**Shoulder 10'**

**Runway 3500' X 60'**

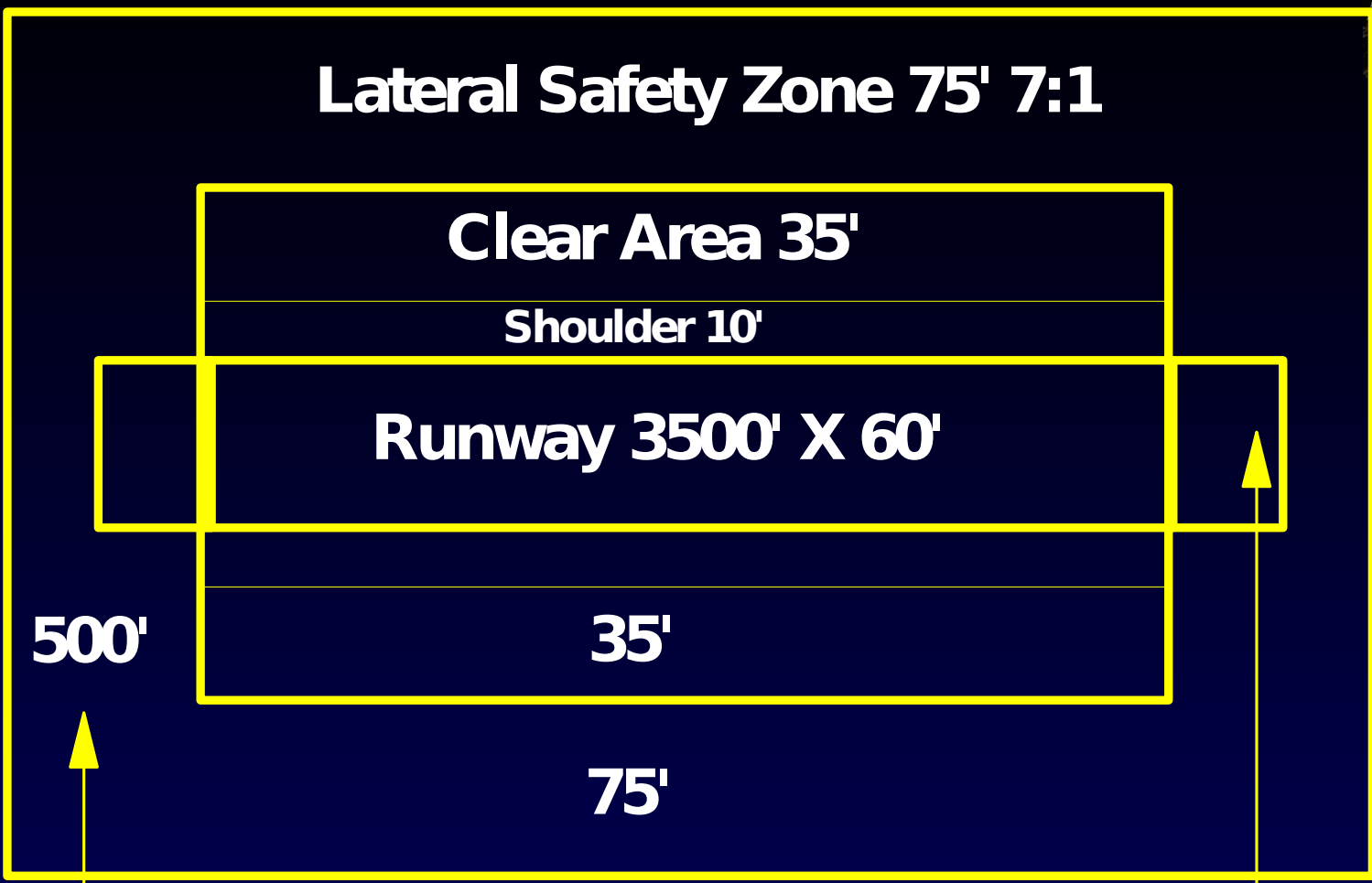
**500'**

**35'**

**75'**

**Clear Zone**

**Overrun  
250' X 60'**





# Clear Areas

- Exceeds 35 feet laterally along the length of the runway on both sides



**Clear Area 35'**

**Shoulder 10'**

**Runway 3500' X 60'**

**35'**



**Overrun  
250' X 60'**

# Clear Area Obstacles



- Tree stumps
  - Must be cut to within 2 inches of the ground
- Rocks
  - In excess of 4 inches should be removed

# Clear Area Obstacles (cont.)



- Ditches
  - Must not be located within 65 feet of centerline
  - CBR can be 10% less than the runway



# Lateral Safety Zone



- Includes length of the runway
- Extends 75 feet laterally from the clear areas on both sides of the runway
- Obstacles that extend higher than 1:7 ratio shall be cut or eliminated



# **Lateral Safety Zone 75' 7:1**

**Clear Area 35'**

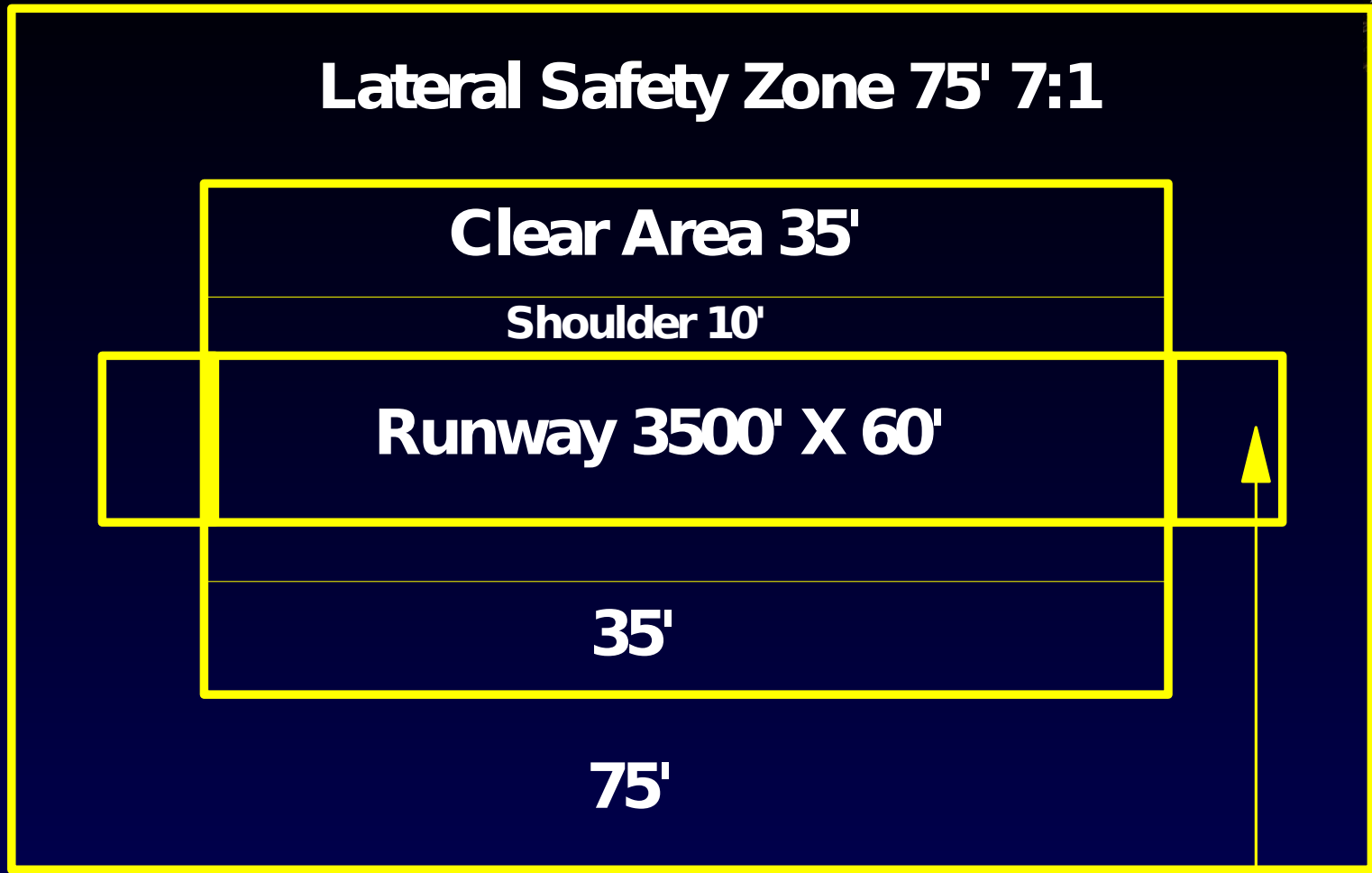
**Shoulder 10'**

**Runway 3500' X 60'**

**35'**

**75'**

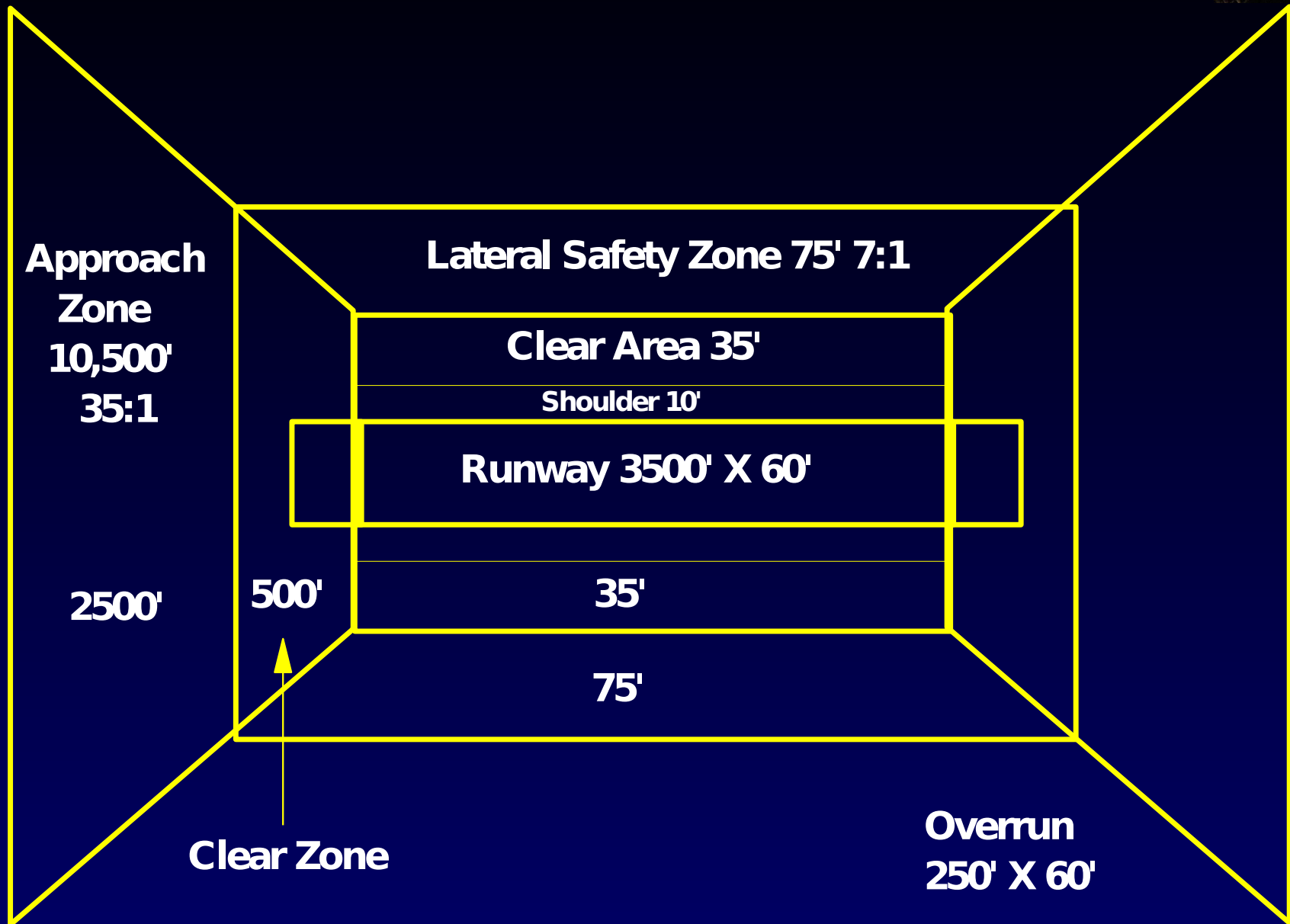
**Overrun  
250' X 60'**





# Approach Zones

- 500' wide at the outer edge of the clear zone
- Extends out 10,500' to a final width of 2,500'
- Elevation ratio is 1:35 from the end of the runway
- Obstacles exceeding this ratio must be removed or eliminated





# Marking Equipment



- Day operations
  - VS-17 Marker Panels
- Night operations
  - Field Marker Lights (FML)
  - IR LED Lights (Peanut Lights)
  - MOSLS (Future enhancement)



# Marking Patterns

# Airfield Marking Pattern (AMP) 1



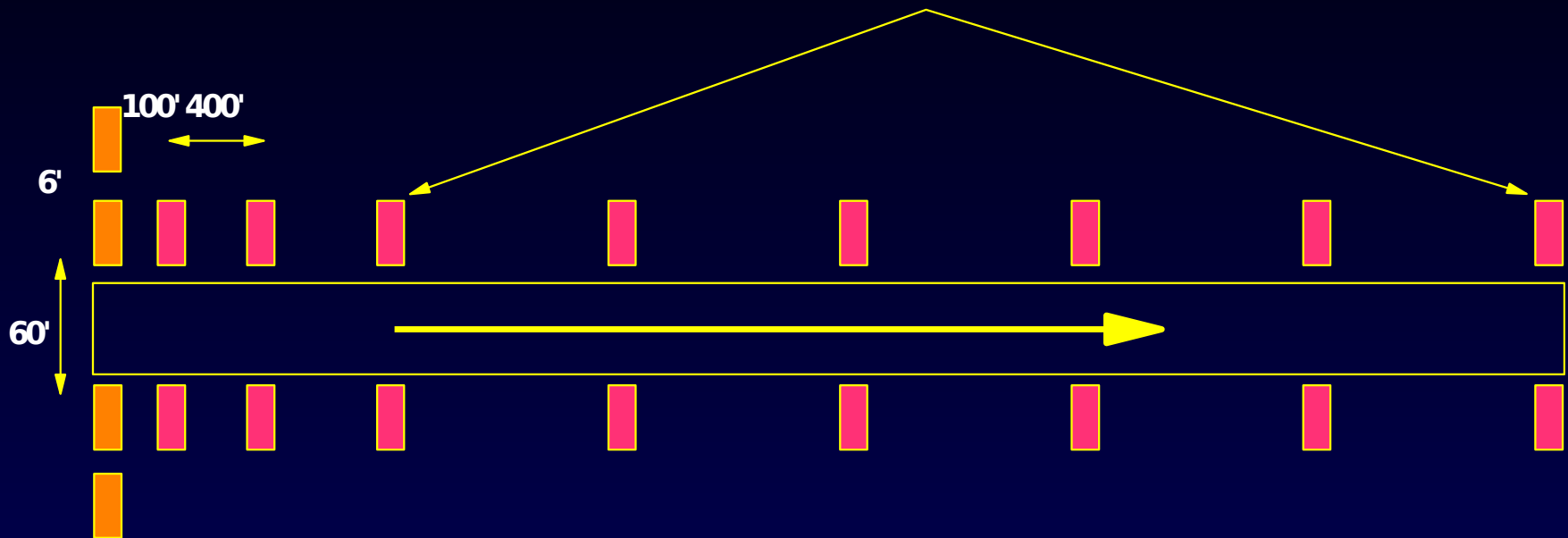
- Used to support conventional day or night tactical operations
- Preferred Method





# AMP-1 Day

Distances between panels is  
500' to 1000' max

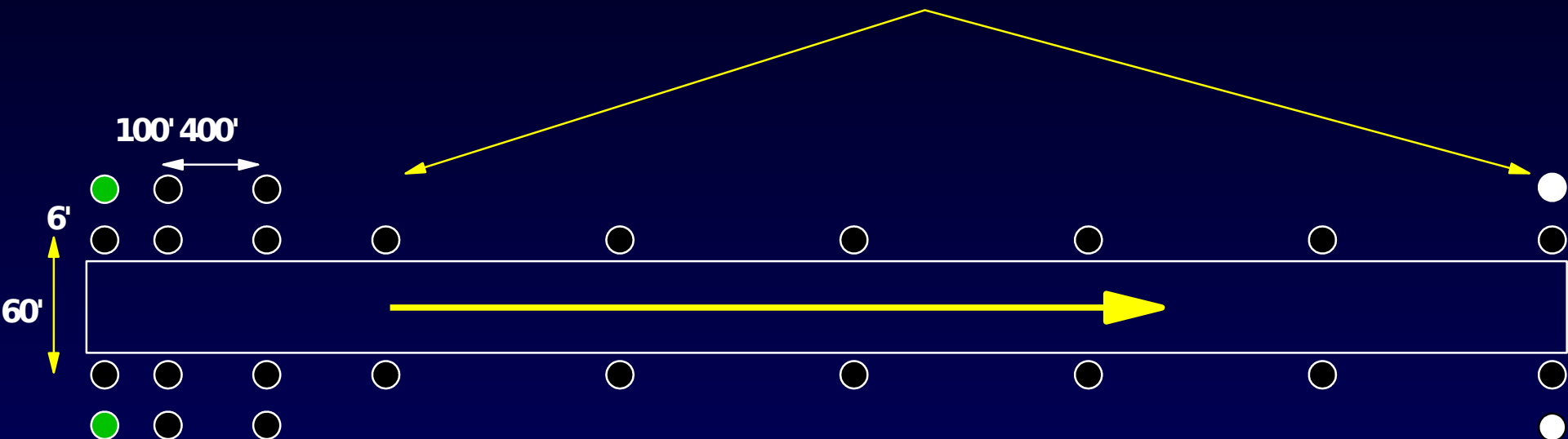


Approach end panels are orange, all others  
are pink.



# AMP-1 Night

Distances between lights is  
500' to 1000' max





# Airfield Marking Pattern (AMP) 2

- Normally used for special operations when minimal set-up time is provided.
- KC-130s may request that the 500 foot go-around light be marked on both sides of the runway in order to clearly define their touchdown zone.





# Marking Procedures



# Reference Man

- Proceeds to the departure end of the runway
- Visually surveying the surface for FOD or hazards
- Serves as a point on which to align the entire runway.



# Base Man

- Proceeds to the approach end of the runway
- Utilizes hand or light signals to align the Pace Man on the reference man at given distances down the runway



# Pace Man

- Paces down the runway to the appropriate distance and waits for alignment instructions from the Baseman
- Then marks that spot with a panel or light
- Proceeds to the next interval





# Set-Up Team

- Set-Up Team finishes marking the TLZ
- Establishes the proper width of the runway



# NAVAIDS



# Summary

- TLZ Classifications
- Surface criteria
- Safety zones
- Marking and procedures



# Questions?